

UNITED STATES OF AMERICA⁷⁵ FERC ¶61,267
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Elizabeth Anne Moler, Chair;
Vicky A. Bailey, James J. Hoecker,
William L. Massey, and Donald F. Santa, Jr.

Duke Power Company) Project No. 2332-003

ORDER ISSUING NEW LICENSE

(Issued June 12, 1996)

Duke Power Company (Duke) filed an application pursuant to Sections 4(e) and 15 of the Federal Power Act (FPA) 1/ for a new license authorizing the continued operation and maintenance of the 8.5-megawatt (MW) Gaston Shoals Project No. 2332, located on the Broad River 2/ in Cherokee County, South Carolina, and Cleveland County, North Carolina. Duke proposes no new capacity and no new construction.

The Commission issued the original license for the Gaston Shoals Project in 1964, 3/ and it expired in 1993. An annual license was issued on January 7, 1994, and since then, project operations have continued pursuant to annual licenses pending the disposition of Duke's application for a new license. For the reasons discussed below, we will issue a new license to Duke.

I. BACKGROUND

Notice of the application was published. Timely motions to intervene were filed by the U.S. Department of the Interior (Interior), the South Carolina Wildlife & Marine Resources Department and the South Carolina Water Resources

1/16 U.S.C. §§ 797 and 807.

2/The Gaston Shoals Project No. 2332 is on a segment of the Broad River which was determined navigable by the Commission. See Duke Power Company, 32 FPC 337, 338 (1964), citing South Carolina Electric & Gas Company, 30 FPC 1364 (1963).

3/32 FPC 337.

Commission. ⁴/ Comments were filed by Trout Unlimited, Interior, and South Carolina DNR.

A Draft Multiple Environmental Assessment (Draft MEA) was issued on April 11, 1995. The Draft MEA addressed the application for new license in this proceeding and applications for new licenses for two other projects on the Broad River, Duke's Ninety-Nine Islands Project No. 2331 and South Carolina Electric and Gas Company's Neal Shoals Project No. 2315.

Comments on the Draft MEA were filed by South Carolina DNR, the South Carolina Department of Health and Environmental Control (South Carolina DHEC), the South Carolina Advisory Council on Historic Preservation, Interior, the Environmental Protection Agency, the U.S. Department of Agriculture, South Carolina Electric and Gas Company, and Duke. These concerns were considered in preparing the Final MEA for this project, which was issued on January 2, 1996. A Safety and Design Assessment was also prepared and is available in the Commission's public file associated with this project.

All comments received from interested agencies and individuals have been fully considered in determining whether, and under what conditions, to issue this license.

II. PROJECT DESCRIPTION

The existing project consists of: a 706.7-foot-long, 43-foot-high upper dam; a 381.34-foot-long, 43-foot-high middle dam; a 472.2-foot-long, 71-foot-high lower dam; a concrete intake structure integral with the powerhouse located at the lower dam; a reservoir with a surface area of about 300 acres; a powerhouse containing four turbine-generator units; a 0.7-mile-long tailrace; a 1.05-mile-long bypassed reach; and other appurtenant structures.

III. APPLICANT'S PLANS AND CAPABILITIES

⁴/On July 1, 1994, the South Carolina Wildlife & Marine Resources Department, the South Carolina Water Resources Commission, the South Carolina Land Resources Conservation Commission, and the South Carolina Geodetic and Geological Survey merged to form the South Carolina Department of Natural Resources (South Carolina DNR).

In accordance with Sections 10(a)(2)(C) and 15(a) of the FPA,
5/ we have evaluated Duke's record as a licensee with respect to the following:
 (1) consumption improvement program; (2) compliance history and ability to comply with the requirements imposed in the new license; (3) safe management, operation, and maintenance of the project; (4) ability to provide efficient and reliable electric service; (5) need for power; (6) transmission services; (7) cost effectiveness of plans; and (8) actions affecting the public.

1. Consumption Improvement Program

Duke has implemented many customer assistance conservation plans, including programs directed toward: (1) senior citizens; (2) low income groups; (3) customer service activities related to energy management; and (4) demand-side management projects in the residential, commercial, and industrial sectors of their service area.

Duke has filed with the Public Service Commission of South Carolina a least cost integrated resources plan which includes conservation measures. From our review of the plan, we believe that Duke is making a good faith effort to conserve electricity and promote energy conservation by its customers.

2. Compliance History and Ability to Comply with the New License

We have reviewed Duke's compliance with the terms and conditions of the existing license. Duke's overall record of making timely filings and compliance with its license is satisfactory. Therefore, we believe Duke can satisfy the conditions of a new license.

5/16 U.S.C. §§ 803(a)(2)(C) and 808(a).

3. Safe Management, Operation, and Maintenance of the Project

Historically, Duke has operated the Gaston Shoals Project in a safe manner. An Emergency Action Plan (EAP) has been prepared and filed with the Commission, and no changes are now proposed that would affect the EAP, which is reviewed and updated annually. The EAP is posted in the control room for the operators' use, should the need arise.

Duke has installed devices to monitor seepage and measure and record any movement in structures. Duke retains an independent consultant to make a complete inspection of the project facilities, including a check on the monitoring devices, every five years, in accordance with Part 12 of the Commission's regulations.

We conclude that the Gaston Shoals Project is safe for continued use and operation.

4. Ability to Provide Efficient and Reliable Electric Service

To evaluate Duke's ability to provide efficient and reliable service, we reviewed (1) Duke's operating plan, (2) its coordination with upstream and downstream projects, and (3) its program to upgrade the operation and maintenance of the project.

Currently, Duke manually operates the project. Using a normal reservoir draw-down of about two feet, the plant is operated during the peak load period using inflow and the available storage.

Because the project has little storage capability, Duke does not need to coordinate its operation with any upstream or downstream water resource projects.

After reviewing the project's operation and maintenance record, we find that Duke has made numerous repairs and some replacements to keep the equipment in good condition.

We conclude that Duke is operating the Gaston Shoals Project in an efficient and reliable manner.

5. Need for Power

To assess the need for power we looked at Duke's system together with a review of the Southeastern Electric Reliability Council's (Southeastern Council) operating region in which the project is located.

In looking at Duke's system, we considered Duke's short- and long-term need for the power, and the cost of alternative power if Duke doesn't receive a new license for the project.

Duke uses the entire project output to serve local loads and reduce cost to ratepayers. Duke's total system requirement is about 75,904 Gigawatthours (GWh). Duke, which is a summer peaking utility, projects an average summer peak growth of 2.1 percent over the forecast period. Its strategy for meeting present and future power needs is composed of three components: (1) supply-side resources (existing and new power plants), (2) demand-side resources (conservation measures), and (3) purchased power resources (purchase of power from alternative sources).

To help meet its projected need, Duke has recently completed and put on line a 16-unit combustion turbine facility with a total generating capacity of 1,184 MW.

The power from the project will also be useful in meeting part of the need for power projected by the Southeastern Council. In its April 1994 Report, the Southeastern Council projects average annual growth rates of 2.3 percent for summer peak demand, 1.8 percent for winter peak demand, and 2.3 percent for annual energy requirements; and shows capacity additions that begin in 1993 and continue throughout the forecast period.

We conclude that Duke has a need for power in both the short and long term, and that the Gaston Shoals Project helps to meet part of this need. The power from the project would be useful in meeting part of the need for power projected by both Duke and the Southeastern Council. The project displaces some fossil-fueled electric power generation, and thereby conserves nonrenewable fossil fuels and reduces the emission of noxious byproducts caused by the combustion of fossil fuels.

6. Transmission Service

Duke proposes no new power development at the project but desires the continued use of the project's energy on Duke's system. The electrical system is designed to function so that no significant operational or circuit loading impacts would occur when the project is out of service. The project's principal advantage to Duke is its proximity to the load it serves. It minimizes electrical losses and improves area system efficiency.

For this project, the transmission equipment extends from the project generators, through appropriate voltage transformation, to a point of connection with the licensee's transmission line. The primary line includes: (1) the generator leads; (2) 2.4/44-kV step-up transformer; (3) the 44-kV transmission line connecting the transformer with the 44-kV bus; and (4) appurtenant facilities.

We conclude that the existing transmission system is sufficient and no changes are necessary.

7. Cost Effectiveness of Plans

Duke does not propose any additional capacity or project modifications other than environmental enhancements. We conclude that the project, as presently constructed and as Duke proposes to operate it in conjunction with minimum flow releases, fully develops and uses the economical hydropower potential of the site.

8. Actions Affecting the Public

Construction of additional recreation facilities by providing canoeing and fishing access to project waters, including two barrier-free fishing areas, will increase recreation opportunities and therefore benefit the public.

IV. WATER QUALITY CERTIFICATION

Under Section 401(a) (1) of the Clean Water Act (CWA), 33 U.S.C. § 1341(a) (1), the Commission may not issue a license for a hydroelectric project unless the state certifying agency has either issued water quality certification for the project or has waived certification by failing to act on a request for certification within

a reasonable period of time, not to exceed one year. 6/

The South Carolina DHEC timely issued its water quality certification for the Gaston Shoals Project on February 25, 1992. The certification contains conditions requiring: (1) protection of water quality through compliance with local and state sediment control/stormwater ordinances; (2) development of a stormwater prevention plan; (3) notice to South Carolina DHEC and downstream industrial water supply users of use of herbicides or impoundment of water in the reservoir for more than 24 hours; and (4) notice to the South Carolina DHEC of project fish kills and licensee methods to prevent fish kills. 7/ These conditions are within the scope of Section 401 of the CWA and will be included in the license.

V. FISH PASSAGE

Section 18 of the FPA 8/ states that the Commission shall require construction, maintenance, and operation by a licensee of such fishways as may be prescribed by the Secretary of Commerce or the Interior. Interior has not, to date, submitted fishway prescriptions to the Commission for this project, but requests that Duke be required to provide fishways at the Gaston Shoals Project when prescribed by the Secretary of the Interior under Section 18 of the FPA. We recognize that future fish passage needs and management objectives may not be ascertainable before a license is issued. Therefore, Article 406 of the new license reserves the Commission's authority to require fishways that the Secretary of the Interior may prescribe in the future.

6/Section 401(a) (1) requires an applicant for a federal license or permit to conduct any activity which may result in any discharge into navigable waters to obtain from the state in which the discharge originates certification that any such discharge will comply with applicable water quality standards.

7/In its certification, the state also noted that it was reserving the right to add conditions later. However, this amounts to a "reopener" provision, which would give the state unilateral authority to alter its certification, inconsistent with Section 401. Therefore, this condition will not become part of the license. See *Tunbridge Mill Corporation*, 68 FERC ¶ 61,078 at p. 61,389 (1994), reh'g denied, 75 FERC ¶ 61,175 (1996).

8/16 U.S.C. § 811.

VI. RECOMMENDATIONS OF FEDERAL AND STATE FISH AND WILDLIFE AGENCIES

Section 10(j)(1) of the FPA 9/ requires the Commission, when issuing a license, to include license conditions, based on recommendations of federal and state fish and wildlife agencies submitted pursuant to the Fish and Wildlife Coordination Act, to "adequately and equitably protect, mitigate damages to, and enhance, fish and wildlife (including related spawning grounds and habitat)" affected by the project.

If the Commission believes that any such recommendation may be inconsistent with the purposes and requirements of Part I of the FPA or other applicable law, Section 10(j)(2) requires the Commission and the agencies to attempt to resolve any such inconsistency, giving due weight to the recommendations, expertise, and statutory responsibilities of such agencies. If the Commission then does not adopt a recommendation, it must explain how the recommendation is inconsistent with applicable law and how the conditions selected by the Commission adequately and equitably protect, mitigate damages to, and enhance fish and wildlife.

The license contains conditions consistent with Interior's and South Carolina DNR's recommendations that Duke: (1) limit reservoir drawdowns to one foot below full pool during March, April, and May, and to two feet below full pool from June through February of each year (Article 401); (2) provide a minimum flow of 350 cfs to the project's bypassed reach from March 1 through May 31 (Article 402); (3) provide continuous minimum flows of 868 cfs from January through April of each year, 651 cfs during May, June, and December, and 434 cfs from July through November, with the provision that when the inflow is less than 434 cfs during any period, the licensee would shut down all units when the pond elevation drops to the seasonal drawdown limit and would operate one unit at its minimum hydraulic output for that part of every hour that's needed to discharge the accumulated inflow or, alternatively, open the trash gate at the middle dam or spill water at the middle or upper dam to release inflow (Article 403);

9/16 U.S.C. § 803(j)(1).

and (4) develop and implement a plan to monitor minimum streamflow releases and reservoir levels (Article 404). 10/

Interior and South Carolina DNR made one recommendation pursuant to Section 10(j) that the license does not adopt. The agencies recommended that Duke provide a minimum flow into the 1.05-mile-long bypassed reach of 300 cfs or inflow from June 1 through the end of February. 11/ The Commission's staff made a preliminary determination that the cost to release such a flow would have a significant adverse effect on project economics and the cost to the project would be greater than the benefits to the fishery, and therefore that the recommendation was inconsistent with the purpose and requirements of Part I of the FPA. The staff recommended, instead, a 150-cfs minimum flow release into the bypassed reach from June through February.

On September 12, 1995, after receiving Interior and South Carolina DNR's comments on the staff's preliminary determination, the staff met with Interior and South Carolina DNR 12/ in an attempt to resolve the inconsistency, but the inconsistency was not resolved. As discussed below, we conclude that the agencies' recommendation is inconsistent with our balancing under FPA Sections 4(e) and 10(a)(1) of beneficial public uses of the waterway, and that the condition selected by the Commission will meet the requirements of Section 10(j)(2) of the FPA.

Interior's and South Carolina DNR's 300-cfs recommendation for the June through February period would provide an average of 93 percent of the maximum habitat for eight adult warmwater fish species

10/South Carolina DNR also made a number of recommendations for recreational facilities (handicapped-accessible parking and bank fishing, two car-parking areas, a "throw-in" launching area for small boats and canoes, bank angler access, a handicapped-accessible fishing platform, bank angler trails, and a schedule for maintenance of the recreational facilities) at the project which are outside the scope of Section 10(j). We have examined these recommendations pursuant to Section 10(a) and conclude that such facilities are warranted. See discussion in Final MEA, Section VII.A. The recommendations are included in Article 412 of the license.

11/See Section VIII.A. of the Final MEA, Section VII.A.

12/Duke also attended the meeting.

^{13/} occurring in the project's bypassed reach. However, the cost (\$315,000 annually) in lost power benefits to release the agencies' recommended flow from June through February would represent about 25 percent of the total current value of the power generated by the project, and this cost to the project would be far greater than the benefits to the fishery resource in the bypassed river reach.

The Commission's adopted condition of a 150-cfs flow into the bypassed reach from June through February will provide an average of 82 percent of the maximum habitat for the eight adult warmwater fish species and would cost \$13,000 annually -- \$302,000 less than the agencies' recommendation. This is a significant enhancement compared to the existing condition of a 15-cfs leakage flow, which provides an average of only 37 percent of the maximum habitat for the eight adult life stages.

In addition, we believe the fishery resource in the project area would be greatly improved by: (1) the 350-cfs minimum flow we adopt for the bypassed reach from March through May, which will provide 89 percent of the maximum habitat for white bass spawning; and (2) the minimum flows we adopt below the tailrace, which will provide near-maximum fish habitat for the much longer (6-mile-long) downstream reach. ^{14/} Therefore, the condition for minimum flows selected by the Commission will adequately protect, mitigate damages to, and enhance fish and wildlife resources in conformance with the requirements of Section 10(j)(2)(B) of the FPA. These conditions are adopted in Articles 402 and 403 of the license.

Interior and the South Carolina DNR also recommended development of a plan for compensatory mitigation for unavoidable fish entrainment mortality caused by the project and a schedule for implementing the plan. They recommended that the plan include, but not be limited to:

- (1) developing, in coordination with Interior and South Carolina DNR, resource enhancement plans and implementation schedules to mitigate for turbine-induced impacts on fish

^{13/} Whitefin shiner, striped jumprock, central stoneroller, northern hog sucker, margined madtom, silver redhorse, redbreast sunfish, and smallmouth bass. See Table 2 in Section V.B. of the Final MEA.

^{14/} See Section VII.A. of the Final MEA.

at the project; and

- (2) setting aside annual compensation to finance these measures, based on entrainment and mortality estimates developed in accordance with the licensee's response to

Item 5(c) of an Additional Information Request issued May 28, 1992. 15/

Although the development of a resource enhancement plan to mitigate for turbine-induced impacts would be within the purview of Section 10(j), the set-aside of money for the development of a resource enhancement plan is not a recommendation pursuant to Section 10(j), because it is not a specific measure to protect or enhance fish and wildlife. We have, however, considered this latter recommendation pursuant to our authority under Section 10(a)(1) of the FPA and, for the reasons discussed below, have adopted it.

While prevention or reduction of adverse impacts is the preferred alternative, where, as in this instance, the project's unmitigable adverse impacts to fishery resources do not warrant denying the license and direct mitigation measures such as fish screens would entail costs both prohibitive and significantly disproportionate to the replacement cost of the lost fish, it is appropriate to consider the use of compensatory mitigation and the licensee's funding thereof. 16/

In the case of the Gaston Shoals Project, studies conducted by Duke indicated that maximum entrainment at the project is about 132,000 fish per year. Duke has estimated that it would cost \$11 million to install fish screens to prevent entrainment at the project, and that the American Fisheries Society (AFS) replacement value of fish lost annually at the project from entrainment would be about \$36,000, of which staff believes 50 percent represents replacement value for nongame fish. 17/

15/The licensee's response to Item 5(c) developed replacement values which were calculated based on the American Fisheries Society's A Handbook of Monetary Values of Fishes and Fish Kill Counting Guidelines (1992).

16/See Ohio Power Company, 71 FERC ¶ 61,092 (1995).

17/See Section V.B.1. of the Final MEA.

License Article 405 therefore requires that Duke provide for compensatory mitigation consistent with the recommendations of Interior and South Carolina DNR. Furthermore, if in the future the project is found to have unanticipated impacts on the fishery resources that require examination, Article 405 reserves the Commission's authority to reopen the license to determine if additional mitigation measures are warranted, after notice and opportunity for comment. 18/

VII. COMPREHENSIVE PLANS

Section 10(a)(2)(A) of the FPA, 16 U.S.C. 803(a)(2)(A), requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving waterways affected by the project. Under section 10(a)(2)(A), federal and state agencies filed 15 comprehensive plans that address various resources in South Carolina. Of these, the Commission staff identified five plans relevant to the Gaston Shoals Project. 19/ No inconsistencies were found.

VIII. COMPREHENSIVE DEVELOPMENT

Sections 4(e) and 10(a)(1) of the FPA, §§ 16 U.S.C. 797(e) and 803(a)(1), require the Commission, in acting on applications for license, to give equal consideration to the power development purposes and to the purposes of energy conservation, the protection, mitigation of damage to, and enhancement of fish and wildlife, the protection of recreational opportunities, and the preservation of

18/ See City of New Martinsville, West Virginia, 73 FERC ¶ 61,041 (1995).

19/ (1) Fisheries USA: the recreational fisheries policy of the U.S. Fish and Wildlife Service, undated, Fish and Wildlife Service, Washington, D.C.; (2) Water Classifications and Standards, and Classified Waters, 1985, South Carolina Department of Health and Environmental Control, Columbia, South Carolina; (3) South Carolina's Comprehensive Outdoor Recreation Plan, 1985, South Carolina Department of Parks, Recreation, and Tourism, Columbia, South Carolina; (4) South Carolina Rivers Assessment, 1988, South Carolina Water Resources Commission, Columbia, South Carolina; and (5) North American Waterfowl Management Plan, 1986, Canadian Wildlife Service.

other aspects of environmental quality. Any license issued shall be such as in the Commission's judgment will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. The decision to license this project, and the terms and conditions included herein, reflect such consideration.

The Draft MEA analyzed the effects associated with the issuance of a new license for the Gaston Shoals Project, and the Final MEA recommends a variety of measures to protect and enhance the environmental resources which, as discussed above, we adopt. We conclude that issuance of a new license for the Gaston Shoals Project will not constitute a major federal action significantly affecting the quality of the human environment.

In determining whether a proposed project will be best adapted to a comprehensive plan for developing a waterway for beneficial public purposes, pursuant to Section 10(a)(1) of the FPA, the Commission considers a number of public interest factors, including the economic benefits of project power.

Under the Commission's new approach to evaluating the economics of hydropower projects, as articulated in Mead Corporation, Publishing Paper Division, 20/ the Commission employs an analysis that uses current costs to compare the costs of the project and likely alternative power with no forecasts concerning potential future inflation, escalation, or deflation beyond the license issuance date. The basic purpose of the Commission's economic analysis is to provide a general estimate of the potential power benefits and the costs of a project, and reasonable alternatives to project power. The estimate helps to support an informed decision concerning what is in the public interest with respect to a proposed license.

In addition, certain economic considerations related to project decommissioning are presented in the decision to issue a new license that are not present in the licensing of new projects. If an existing project is not issued a new license, or if the licensee declines to accept the new license, the project probably will have to be retired in one form or another. This could range from simply removing the generator at the project to major environmental restoration varying from minor measures to dam removal.

20/72 FERC ¶ 61,027 (1995).

Based on current economic conditions, without future escalation or inflation, the Gaston Shoals Project, if licensed as Duke proposes, would provide a firm capacity of 6,880 kW and produce an average of about 45.7 gigawatthours (GWh) of energy, at an annual cost of about \$1.583 million (34.6 mills/kWh) or about \$63,000 (about 1.4 mills/kWh) more than the current cost of an equivalent amount of capacity and energy using alternative power sources. If licensed in accordance with the conditions adopted herein, the project will provide a firm capacity of 4,600 kW and produce an average of about 40.66 GWh of energy at an annual cost of about \$1.65 million (40.6 mills/kWh), or about \$367,000 (about 9.0 mills/kWh) more than the current cost of alternative power sources. 21/

In any event, it is Duke that must make the business decision whether to pursue the license in view of what appear to be the net economic costs of the project. As we explained in Mead, supra, project economics is only one of the many public interest factors we consider in determining whether or not, and under what conditions, to issue a license. 22/

Based on our review of the agency and public comments filed on this project, our review of staff's evaluation of the environmental and economic effects of the proposed project and its alternatives, and our analysis pursuant to Sections 4(e) and 10(a)(1), we find that the Gaston Shoals Project, with our mitigative and enhancement measures, will be best adapted to the comprehensive development of

21/The alternative power costs consist of an energy and a capacity component. We base the alternative energy cost of 23.3 mills/kWh on Duke's 1995 simulation of its power system. To develop hourly avoided energy costs, Duke used the PROMOD system simulation model. To value project capacity, we used our estimate of the cost of building a new combined-cycle combustion turbine plant in 1995: \$73/kW/yr.

22/In analyzing public interest factors, we take into consideration the fact that hydroelectric projects offer unique electric utility system operational benefits, and that proposed projects may provide substantial benefits not directly related to utility operations, benefits that would be lost if a license were denied solely on economic grounds. See City of Augusta, et al., 72 FERC ¶ 61,114, flat copy at p. 19 n. 57 (1995).

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the Broad River for beneficial public uses.

IX. LICENSE TERM

Section 15(e) of the FPA 23/ specifies that any license issued shall be for a term that the Commission determines to be in the public interest, but not less than 30 years nor more than 50 years from the date on which the license is issued. Commission policy establishes 30-year terms for projects with little or no redevelopment, new construction, new capacity, or environmental mitigative or enhancement measures; 40-year terms for projects with a moderate amount of proposed redevelopment, new construction, new capacity or mitigative and enhancement measures; and 50-year terms for projects with proposed extensive redevelopment, new construction, new capacity, or mitigative and enhancement measures. Accordingly, because this new license authorizes moderate mitigative and enhancement measures, 24/ we are providing a license term of 40 years for the Gaston Shoals Project.

X. SUMMARY

Background information, analysis of impacts, support for related license articles, and the basis for a finding of no significant impact on the environment are contained in the MEA.

The design of this project is consistent with the engineering standards governing dam safety. The project will be safe if operated and maintained in accordance with the requirements of this license. Analysis of related issues is provided in the Safety and Design Assessment.

23/16 U.S.C. § 808(e).

24/The license contains articles prescribing mitigation and enhancement measures by limiting reservoir drawdowns (Article 401), maintaining seasonal minimum flows (Articles 402 and 403), installing gages to monitor minimum flow releases and reservoir drawdowns (Article 404), funding mitigation for turbine-induced impacts on fish (Article 405), reserving authority to the Commission to require fishways (Article 406), implementing plans for sediment release (Article 407), wildlife protection (Articles 408 and 409), cultural resources management (Articles 410 and 411), and recreation enhancement (Article 412).

The Commission orders:

(A) This license is issued to Duke Power Company (licensee), for a period of 40 years, effective the first day of the month in which this order is issued, to operate and maintain the Gaston Shoals Project. This license is subject to the terms and conditions of the Federal Power Act (FPA), which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

(1) All lands, to the extent of the licensee's interests in those lands, enclosed by the project boundary shown by exhibit G:

<u>Exhibit G</u>	<u>FERC No. 2332-</u>	<u>Showing</u>
1	103	Project Boundary Map

(2) Project works consisting of: (1) a 706.7-foot-long, 43-foot-high upper dam; a 381.34-foot-long, 43-foot-high middle dam; a 472.2-foot-long, 71-foot-high lower dam; (2) a powerhouse, located at the lower dam, containing four turbine-generator units, with a total rated capacity of 8.5 MW; (3) a concrete intake structure integral with the powerhouse, and located at the lower dam; (4) a reservoir at elevation 605 feet mean sea level (msl) with a surface area of about 300 acres; (5) a tailrace about 0.7 mile long; and (6) other appurtenant structures. The project works generally described above are more specifically shown and described by the following exhibits that also form a part of the application for license and that are designed and described as:

The following parts of Exhibit A and the Exhibit F drawings conform to the Commission's rules and regulations, and are approved and made a part of the license:

Exhibit A:Project Description

<u>Section</u>	<u>Title</u>
A.3	Equipment Description, page A-10 & A11

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<u>Exhibit F:</u>	<u>FERC No. 2332-</u>	<u>Showing</u>
F-1	101	Plan and Profile
F-2	102	Sections and Details

(3) All of the structures, fixtures, equipment or facilities used to operate or maintain the project and located within the project boundary, all portable property that may be employed in connection with the project, and all riparian or other rights that are necessary or appropriate in the operation or maintenance of the project.

(C) Exhibits A, F, and G as designated in ordering paragraph (B) above are approved and made part of the license.

(D) This license is subject to the articles set forth in Form L-3 (October 1975), entitled "Terms and Conditions of License for Constructed Major Project Affecting Navigable Waters of U.S.," and the following additional articles:

Article 201. The licensee shall pay the United States an annual charge, effective as of the first day of the month in which this license is issued, for the purpose of reimbursing the United States for the costs of administering Part I of the Federal Power Act, a reasonable amount as determined in accordance with the provisions of the Commission's regulations in effect from time to time. The authorized installed capacity for that purpose is 8,500 kilowatts.

Article 202. Within six months from the date of issuance of this order, the licensee shall file for Commission approval a revised Exhibit G to include within the project boundary the lands needed permanently for construction, use, and maintenance of the recreational facilities described in Article 412.

Article 203. If the licensee's project was directly benefitted by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement during the term of the original license (including extensions of that term by annual licenses), and if those headwater benefits were not previously assessed and reimbursed to the owner of the headwater improvement, the licensee shall reimburse the owner of the headwater improvement for those benefits, at such time as they are assessed, in the same manner as for benefits received during the term of this new license.

Article 204. Pursuant to Section 10(d) of the Federal Power Act, a specified reasonable rate of return upon the net investment in the project shall be used for determining surplus earnings of the project for the establishment and maintenance of amortization reserves. The licensee shall set aside in a project amortization reserve account at the end of each fiscal year one half of the project surplus earnings, if any, in excess of the specified rate of return per annum on the net investment. To the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year, the licensee shall deduct the amount of that deficiency from the amount of any surplus earnings subsequently accumulated, until absorbed. The licensee shall set aside one-half of the remaining surplus earnings, if any, cumulatively computed, in the project amortization reserve account. The licensee shall maintain the amounts established in the project amortization reserved account until further order of the Commission.

The specified reasonable rate of return used in computing amortization reserves shall be calculated annually based on current capital ratios developed from an average of 13 monthly balances of amounts properly includible in the licensee's long-term debt and proprietary capital accounts as listed in the Commission's Uniform System of Accounts. The cost rate for such ratios shall be the weighted average cost of long-term debt and preferred stock for the year, and the cost of common equity shall be the interest rate on ten-year government bonds (reported as the Treasury Department's ten-year constant maturity series) computed on the monthly average for the year in question plus four percentage points (400 basis points).

Article 401. Within 60 days from the date the Commission approves the gaging plan required in Article 404, the licensee shall limit the maximum reservoir drawdown to one foot below full pool during March, April, and May, and two feet below full pool June through February. These drawdowns may be temporarily modified if required by operating emergencies beyond the control of the licensee, and for short periods upon agreement between the licensee, the South Carolina Department of Natural Resources, and the U.S. Fish and Wildlife Service. If the drawdowns are so modified, the licensee shall notify the Commission as soon as possible, but no later than ten days after each such incident.

Article 402. Within 60 days from the date the Commission approves the gaging plan required in Article 404, the licensee shall

release from the Gaston Shoals dam, minimum flows of 150 cfs June through February, and 350 cfs March through May, into the 1.05-mile-long bypassed reach to enhance the fish resources. These flows may be temporarily modified if required by operating emergencies beyond the control of the licensee, and for short periods upon agreement between the licensee, the South Carolina Department of Natural Resources, and the U.S. Fish and Wildlife Service. If the flow is so modified, the licensee shall notify the Commission as soon as possible, but no later than 10 days after each such incident.

Article 403. Within 60 days from the date the Commission approves the gaging plan required in Article 404, the licensee shall release from the Gaston Shoals Project, into the Broad River, minimum flows as measured at the Highway 18 bridge (about 1.5 miles below the powerhouse) of 868 cfs (January through April), 651 cfs (May, June, and December), and 434 cfs (July through November), or inflow, whichever is less, for fishery protection and recreational navigation. When inflow is less than 434 cfs during any period, inflow can be stored and released through the turbines on an hourly cycle. Alternatively, the licensee could open the trash gate at the middle dam or spill water at the middle or upper dam to release the inflow. These flows may be temporarily modified if required by operating emergencies beyond the control of the licensee, and for short periods upon agreement between the licensee, the South Carolina Department of Natural Resources, and the U.S. Fish and Wildlife Service. If the flow is so modified, the licensee shall notify the Commission as soon as possible, but no later than 10 days after each such incident.

Article 404. Within six months from the date of issuance of this license, the licensee shall file for Commission approval a plan to install, operate, and maintain streamflow gages necessary to monitor the minimum flow releases required in Articles 402 and 403, and a gage to monitor the maximum reservoir drawdowns required in Article 401.

The plan shall include but not be limited to:

- (1) the method of collecting and recording the flow and maximum drawdown data;
- (2) a schedule for installing the required equipment;
- (3) the proposed location, design, and calibration of the

monitoring equipment; and

- (4)a provision for providing recorded data to the consulted agencies within 30 days from the date of an agency's request for the data.

The licensee shall prepare the plan after consultation with the U.S. Geological Survey, U.S. Fish and Wildlife Service, and the South Carolina Department of Natural Resources. The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 405. The licensee, after consulting with the South Carolina Department of Natural Resources and the U.S. Fish and Wildlife Service, shall develop fisheries resource plans and implementation schedules to address turbine-induced impacts on fish at the Gaston Shoals Project, using the funds described in the following paragraph. Within 180 days from the date of issuance of this license, and every ten years thereafter, the licensee shall file a fisheries resource plan and implementation schedule for Commission approval. The plan shall describe specific activities to be undertaken and contain provisions to monitor the success of these measures. The plan shall include any comments received from the consulted agencies on the proposed plan, and a description of how the agency comments are accommodated by the developed plan. The Commission reserves the right to modify the proposed plan and schedule. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

By January 1 of each year following the issuance of this license, the licensee shall provide up to \$36,000 in 1991 dollars, adjusted annually by the previous year's consumer price index (CPI), to

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finance fisheries resource plans.

The Commission reserves the right to: (1) require the licensee to assess the applicability of new technology regarding cost-effective measures for reducing turbine-induced mortality or injury at the Gaston Shoals Project; (2) require the installation of fish protection at the Gaston Shoals Project in lieu of other proposed measures, should fish protection be feasible; and (3) after notice and opportunity for comment, modify or eliminate the compensatory measures and their funding, should it be necessary or appropriate.

Article 406. Authority is reserved to the Commission to require the licensee to construct, operate, and maintain, or provide for the construction, operation, and maintenance of, such fishways as may be prescribed by the Secretary of Interior.

Article 407. Within six months from the date of issuance of this license, the licensee shall file for Commission approval a sediment release plan to protect aquatic resources downstream of the project. The plan should include a provision requiring the licensee to consult with the South Carolina Department of Health and Environmental Control before releasing sediments.

The licensee shall prepare the plan after consultation with the South Carolina Department of Natural Resources, the South Carolina Department of Health and Environmental Control and the U.S. Fish and Wildlife Service. The licensee shall include with the plan, documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project specific information.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 408. The licensee shall implement its Wildlife Resources Plan, filed on April 30, 1994, for lands within the project boundary, that would: (1) avoid all land development and disturbance, except activities essential to operate and maintain the

project; (2) restrict all timber harvesting on project lands and allow for the timber resources to attain mature and old growth characteristics, thereby creating valuable late successional habitats and species; (3) retain natural tree snags and dens that provide wildlife habitat; (4) conserve all mature trees for potential bald eagles; and (5) avoid removal of mast-producing hardwoods for wildlife.

Article 409. Within six months of the date of this license, the licensee shall file a plan to construct, maintain, and monitor five wood duck and five eastern bluebird nest boxes. This plan shall include: (1) bird box design specifications; (2) assurance of predatory guards on each box; (3) map(s) showing location, placement, and positioning of the boxes to optimize their use by the respective bird species; (4) an implementation schedule ; (5) procedures for annual monitoring and reporting; and (6) provisions for modifying the numbers and locations of the boxes if nesting is unsuccessful.

The licensee shall prepare the plan after consultation with the U.S. Fish and Wildlife Service and South Carolina Department of Natural Resources. The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the nest box plan. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 410. The licensee shall, before initiating any proposed changes that may have an effect on the historical integrity of the project dam and powerhouse: (1) evaluate the eligibility of the project dam and powerhouse for inclusion in the National Register of Historic Places; (2) assess the effects of the proposed changes on historical integrity; (3) prepare a cultural resources management plan to avoid or mitigate effects; (4) base items (1) through (3) above on the recommendations of the South Carolina State Historic Preservation Officer (SHPO) and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation; and (5) file a report on items (1) through (3) for Commission

approval, together with comment letters from the SHPO documenting consultation and the adequacy of the report and the work upon which it is based.

The Commission may require revisions to the report based on the filing. The licensee shall not implement the cultural resources management plan until informed by the Commission that the requirements of this article have been fulfilled.

Article 411. The licensee shall instruct project personnel of the possibility of finding archeological sites during construction or other ground-disturbing activity at the project, including erosion along the project pool margin and elsewhere in the project area. If archeological sites are found, the licensee shall: (1) consult with the South Carolina State Historic Preservation Officer (SHPO); (2) prepare a cultural resources management plan and a schedule to evaluate the significance of the sites and to avoid or mitigate any impacts to Register eligible sites; (3) base the plan on recommendations of the SHPO and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation; (4) file the plan for Commission approval, together with the written comments of the SHPO documenting consultation and the adequacy of the plan; and (5) take the necessary steps to protect the discovered archeological sites from further impact until notified by the Commission that all of these requirements have been satisfied.

The Commission may require a cultural resources survey and changes to the cultural resources management plan based on the filings. The licensee shall not implement a cultural resources management plan or begin any land-clearing or land-disturbing activities in the vicinity of any discovered sites until informed by the Commission that the requirements of this article have been fulfilled.

Article 412. Within six months from the date of issuance of this license, the licensee shall file with the Commission, for approval, a recreation enhancement plan for providing canoeing and fishing access at the Gaston Shoals Project.

The plan shall include, at a minimum, a description and a map or drawing of the following facilities and improvement measures:

- (1) The existing canoe portage facility around the project dam;
- (2) the modification of the Big Bay access area to be accessible

- to the disabled, including bank fishing opportunities;
- (3) the enhancement of the existing Boiling Springs canoe and fishing access area and include it in the recreation plan to ensure the public adequate access to the project reservoir;
 - (4) the development of an access site to the bypassed reach for anglers, including an angler trail along the west bank;
 - (5) the provision of a tailrace access site for bank fishing, including a barrier-free fishing platform; and
 - (6) the enhancement of the existing Bowens River canoe and fishing access area and include it in the recreation plan to ensure the public adequate access directly downstream of the project.

The licensee shall include in the plan: (1) appropriate measures to prevent erosion and sedimentation during construction of each facility; and (2) a maintenance schedule for each facility that addresses, at a minimum, collection of litter and trash, clearing of brush and undergrowth, and maintenance of signs, parking areas, and facilities.

The licensee shall prepare the plan after consulting with the South Carolina Department of Natural Resources (South Carolina DNR). The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the South Carolina DNR, and specific descriptions of how the South Carolina DNR's comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the South Carolina DNR to comment and make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project specific information.

The Commission reserves the right to require changes to the plan. No construction activities associated with the recreation plan shall begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission. The facilities shall be constructed within one year of Commission approval of the final plans.

Article 413. (a) In accordance with the provisions of this article, the licensee shall have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain types of use and occupancy, without prior Commission approval. The licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the licensee shall also have continuing responsibility to supervise and control the use and occupancies for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed under this article. If a permitted use and occupancy violates any condition of this article or any other condition imposed by the licensee for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the licensee shall take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, canceling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

(b) The type of use and occupancy of project lands and water for which the licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 watercraft at a time and where said facility is intended to serve single-family type dwellings; (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline; and (4) food plots and other wildlife enhancement. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the licensee shall require multiple use and occupancy of facilities for access to project lands or waters. The licensee shall also ensure, to the satisfaction of the Commission's authorized representative, that the use and occupancies for which it grants permission are maintained in good repair and comply with applicable state and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the licensee shall: (1) inspect the site of the proposed

construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and would not change the basic contour of the reservoir shoreline. To implement this paragraph (b), the licensee may, among other things, establish a program for issuing permits for the specified types of use and occupancy of project lands and waters which may be subject to the payment of

a reasonable fee to cover the licensee's costs of administering the permit program. The Commission reserves the right to require the licensee to file a description of its standards, guidelines, and procedures for implementing this paragraph (b) and to require modification of those standards, guidelines, or procedures.

(c) The licensee may convey easements or rights-of-way across, or leases of, project lands for: (1) replacement, expansion, realignment, or maintenance of bridges or roads where all necessary state and federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas, and electric utility distribution lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69-kV or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project reservoir. No later than January 31 of each year, the licensee shall file three copies of a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed.

(d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certification or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 watercraft at a time and are

located at least one-half mile (measured over project waters) from any other private or public marina; (6) recreational development consistent with an approved Exhibit R or approved report on recreational resources of an Exhibit E; and (7) other uses, if: (i) the amount of land conveyed for a particular use is five acres or less; (ii) all of the land conveyed is located at least 75 feet, measured horizontally, from project waters at normal surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d) (7) in any calendar year. At least 60 days before conveying any interest in project lands under this paragraph (d), the licensee must submit a letter to the Director, Office of Hydropower Licensing, stating its intent to convey the interest and briefly describing the type of interest and location of the lands to be conveyed (a marked Exhibit G or K map may be used), the nature of the proposed use, the identity of any federal or state agency official consulted, and any federal or state approvals required for the proposed use. Unless the Director, within 45 days from the filing date, requires the licensee to file an application for prior approval, the licensee may convey the intended interest at the end of that period.

(e) The following additional conditions apply to any intended conveyance under paragraph (c) or (d) of this article:

(1) Before conveying the interest, the licensee shall consult with federal and state fish and wildlife or recreation agencies, as appropriate, and the State Historic Preservation Officer.

(2) Before conveying the interest, the licensee shall determine that the proposed use of the lands to be conveyed is not inconsistent with any approved Exhibit R or approved report on recreational resources of an Exhibit E; or, if the project does not have an approved Exhibit R or approved report on recreational resources, that the lands to be conveyed do not have recreational value.

(3) The instrument of conveyance must include the following covenants running with the land: (i) the use of the lands conveyed shall not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; (ii) the grantee shall take all reasonable precautions to insure that the construction, operation, and maintenance of structures or facilities on the conveyed lands will occur in a manner that will protect the scenic, recreational, and environmental values of the project; and

(iii) the grantee shall not unduly restrict public access to project waters.

(4) The Commission reserves the right to require the licensee to take reasonable remedial action to correct any violation of the terms and conditions of this article, for the protection and enhancement of the project's scenic, recreational, and other environmental values.

(f) The conveyance of an interest in project lands under this article does not in itself change the project boundaries. The project boundaries may be changed to exclude land conveyed under this article only upon approval of revised Exhibit G or K drawings (project boundary maps) reflecting exclusion of that land. Lands conveyed under this article will be excluded from the project only upon a determination that the lands are not necessary for project purposes such as operation and maintenance, flowage, recreation, public access, protection of environmental resources, and shoreline control, including shoreline aesthetic values. Absent extraordinary circumstances, proposals to exclude lands conveyed under this article from the project shall be consolidated for consideration when revised Exhibit G or K drawings would be filed for approval for other purposes.

(g) The authority granted to the licensee under this article shall not apply to any part of the public lands and reservations of the United States included within the project boundary.

(E) The licensee shall serve copies of any Commission filing required by this order on any entity specified in this order to be consulted on matters related to that filing. Proof of service on these entities must accompany the filing with the Commission.

(F) This order is final unless a request for rehearing is filed within 30 days from the date of its issuance, as provided in Section 313(a) of the FPA. The filing of a request for

rehearing does not operate as a stay of the effective date of this order or of any other date specified in this order, except as specifically ordered by the Commission. The licensee's failure to

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file a request for rehearing shall constitute acceptance of this license.

By the Commission.

(S E A L)

Lois D. Cashell,
Secretary.